

## High Gain Solar Research & Deployment B-Roll

### *Scene-by-Scene Description*

Get the facts behind the footage available on the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) B-Roll Web site at [eere.energy.gov/news/b\\_roll.cfm](http://eere.energy.gov/news/b_roll.cfm).

**Video Title:** High Gain Solar Research B-Roll

*Video Only/No Audio*

**Location:** Mountain View, California

**Shoot Date:** June 16, 2010

**Total Running Time:** 7:23

**Scene 1:** 00:05: Wide shots of a working high gain solar (HGS) model at the office site of the manufacturer of the HGS system.

**Scene 2:** 00:47: Close-up shots of photovoltaic (PV) receivers on high gain solar panels.

**Scene 3:** 01:16: Close-up shots of the back side of a PV panel. Shown are the cooling fins that allow higher temperatures to be used with this particular PV system.

**Scene 4:** 01:44: The system is tested. A technician checks the efficiency and voltage output from the solar panel.

**Scene 5:** 02:26: HGS panel demonstration project produces electricity at a regional bus transit center. HGS is a form of concentrating photovoltaics (CPV) technology that can deliver ten times more energy per gram of silicon than flat solar panels.

**Scene 6:** 03:39: System testing. A wet hipot (high potential) test measures solar panel durability against moisture.

**Scene 7:** 04:31: System testing. Hail damage is analyzed on the system's reflective surfaces.

**Scene 8:** 05:37: System testing. Weatherization test in accelerated temperature fluctuation.

**Scene 9:** 06:23: System testing. Accelerated wear test of the rotation motor over time.

### *Learn More about High Gain Solar*

Concentrating photovoltaics (CPV) plants use mirrors or lenses to concentrate sunlight onto an array of PV panels containing high-efficiency solar cells. The concentration decreases the required cell area while also increasing cell efficiency. High gain solar (HGS) is a form of CPV that can deliver ten times more energy per gram of silicon than flat solar panels. HGS systems are easily upgradable and scalable, drawing on proven materials and traditional manufacturing processes available on a large scale to keep costs low.

The National Renewable Energy Laboratory (NREL) supports the research and development of CPV technologies as a viable alternative to other forms of CSP and PV. Learn more about NREL's CPV work at [nrel.gov/csp/concentrating\\_pv.html](https://www.nrel.gov/csp/concentrating_pv.html).